CLAIMS:

Claim 1. A power divider for a microwave waveguide having an input and multiple outputs,

the divider comprising an impedance post, said impedance post being located in the waveguide between the input and at least two outputs,

at least one power selective probe, said power selective probe(s) being respectively located in the waveguide between said impedance post and one of said at least two outputs,

and adjustment means to selectively set said power selective probe(s) so as to alter the power through its respective output.

Claim 2. A power divider of claim 1 wherein the waveguide has a lateral cross-section and a longitudinal axes between said impedance post, and said power selective probe,

and said power selective probe operating perpendicular to such longitudinal axes across the lateral cross section.

Claim 3. A power divider of claim 2 characterized by said power selective probe comprising a capacitive probe, said capacitive probe being flanked by a pair of inductive members,

and each pair of said inductive members extending across the lateral cross section located on either side of said capacitive probe.

Claim 4. A power divider of claim 1 wherein said selective probe is variably altered by an adjustment means.

Claim 5. A power divider of claim 4 characterized by said adjustment means being by physical movement of said power selective probe.

Claim 6. A power divider of claim 4 characterized by said alterations being preset by physical replacement of said power selective probe.

Claim 7. A power divider of claim 1 characterized by two outputs.

Claim 8. A power divider of claim 1 characterized by the distance between said impedance post and said power selective probe being within 0.1 of 91% of the wavelength in the waveguide at the center frequency of the operating bandwidth.

Claim 9. A power divider of claim 8 further characterized by the distance between said impedance post and said power selective probe is 91% of the wavelength in the waveguide at the center frequency of the operating bandwidth.

Claim 10. A power divider of claim 1 characterized by said impedance post having a diameter, said diameter being 4.4% of the wavelength in the waveguide at the center frequency of the operating bandwidth.

Claim 11. A power divider of claim 1 characterized in that there are two power selective probes,

the waveguide having an electrical center of the power divider junction, such center being described by the intersection of the input power axis and the axes of power output from the power divider to said two power selective probes,

and said impedance post being located within an area described by the circle of origin at the electrical center of the power dividing junction and a radius of 3.5" therefrom.

Claim 12. A power divider of claim 1 characterized in that said power selective probes is located at least 1.5 wavelength in the waveguide within 0.1% of the center frequency

of the operating bandwidth from any component located along the longitudinal axis of the waveguide.

Claim 13. A power divider for a microwave waveguide having an input and two outputs,

the divider comprising an impedance post, said impedance post being located in the waveguide between the input and at both outputs,

a first power selective probe, said first power selective probe being respectively located in the waveguide between said impedance post and a first of the outputs,

adjustment means to selectively set said first power selective probe so as to alter the power through its respective first output,

a second power selective probe, said second power selective probe being respectively located in the waveguide between said impedance post and a second of the outputs,

and selective means to selectively set said second power selective probe so as to alter the power through its respective second output.

Claim 14. A power divider of claim 1 wherein the waveguide has a lateral cross-section, said cross-section

having a longitudinal axes between said first power selective and said second power selective probe,

and said first and second power selective probes operating perpendicular to such longitudinal axes across the lateral cross section.

Claim 15. A power divider of claim 1 characterized by each of said first and second power selective probes each comprising a capacitive probe, said capacitive probe being flanked by a pair of inductive members,

and each pair of said inductive members extending across the lateral cross section located on either side of said capacitive probe.

Claim 16. A power divider of claim 1 characterized by the distance between said impedance post and each of said first and said second power selective probes being within 0.1 of 91% of the wavelength in the waveguide at the center frequency of the operating bandwidth.

Claim 17. A power divider of claim 13 characterized by said impedance post having a diameter, said diameter being 4.4% of the wavelength in the waveguide at the center frequency of the operating bandwidth.

Claim 18. A power divider of claim 1 characterized in that at least one of said power selective probes is located at least 1.5 wavelength in the waveguide within 0.1% of the center frequency of the operating bandwidth from any component located along the longitudinal axis of the waveguide.

Claim 19. A power divider for a microwave waveguide having an input and multiple outputs,

the divider comprising an impedance post, said impedance post being located in the waveguide between the input and at least two outputs,

a first power selective capacitive probe, said first power selective capacitive probe being respectively located in the waveguide between said impedance post and a first of said outputs,

selective means to selectively set said first power selective capacitive probe so as to alter the power through its respective first output,

said first capacitive probe being flanked by a first pair of inductive members,

each first pair of said inductive members extending across the lateral cross section located on either side of said first capacitive probe,

a second power selective capacitive probe, said second power selective capacitive probe being respectively located in the waveguide between said impedance post and a second of said the outputs,

selective means to selectively set said second power selective capacitive probe so as to alter the power through its respective second output,

said second capacitive probe being flanked by a second pair of inductive members,

and each second pair of said inductive members extending across the lateral cross section located on either side of said second capacitive probe.

Claim 20. A power divider of claim 1 wherein the waveguide has a lateral cross-section, said cross-section having a longitudinal axes between said impedance post and said first and second capacitive power selective probes,

and said power selective probes operating perpendicular to such longitudinal axes across the lateral cross section.

Claim 21. A power divider of claim 19 characterized by the distance between said power divider and each of said power selective probes being within 0.1 of 91% of the

wavelength in the waveguide at the center frequency of the operating bandwidth.

Claim 22. A method of dividing the power from a waveguide input to at least two outputs,

the method comprising increasing the resistance between the input and one output.

Claim 23. A method of controlling the power in a microwave waveguide having an input and multiple outputs,

the method comprising locating an impedance post in the waveguide between the input and at least two outputs,

and moving at least a selective probe located in the waveguide between said power divider and one of said at least two outputs to selectively set said power through its respective output.